REMARKS

By the present amendment, claims 1-14 have been canceled without prejudice or disclaimer of the subject matter thereof, and new claims 15-23 have been presented, wherein claims 15 and 18 are independent claims directed to different embodiments of the present invention, as will be discussed below, and applicants submit that the claims, as presented, should be considered in compliance with 35 U.S.C. §112, second paragraph.

As an aid to the Examiner, reference is made to the attached Sketch corresponding to Figs. 1B representing one embodiment and Fig. 3B representing another embodiment of the drawings of this application, as will be discussed below. In accordance with the present invention, if irradiating light is polarized in the direction "A", namely, a1 to a2 or a1' to a2' in either of Fig. 1B and Fig. 3B, plasmon is excited at the gap "g" as shown in Fig. 1B, or the tip part as shown in Fig. 3B. However, if the irradiating light is polarized in the direction B, namely, b1 to b2 or b1' to b2', plasmon is not excited at the tip part or the gap. If the direction of A and the direction of the polarized light match with one another, many electrons move in the direction of the gap or the tip and electrons accumulate in the part near the gap or near the tip. In accordance with the present invention, the portion near the gap or the tip part is made of metal so that electrons are accumulated, whereby by proper light irradiation, the plasmon is excited. When the direction of B and the direction of the polarized light match with one another, electrons do not move in the direction of B and electrons do not accumulate in the part of the gap or the tip so that substantially no plasmon is excited. In accordance with the present invention, a nonmetal area is provided in the direction B so that electrons do no move in the direction of B.

Turning to newly presented independent claim 15, such claim is generally directed to the embodiment as illustrated in Fig. 2 utilizing a probe or metal member as illustrated in Fig. 1B. As described at page 11 of the specification, Fig. 1B shows,

as one example thereof, the near-field light probe having a triangle-shaped metal pattern 106 on a planar substrate 101 with a spacing g between apexes of the two opposing triangles. Further, a non-coated area 107 is provided at the apexes of the triangles and their vicinity. Applicants submit that claim 15 recites this structural arrangement in the recitation of a metal member disposed on a planar substrate so as to have at least one pointed part with a width which monotonically decreases in a first direction and delimiting a gap in an area where no metal member is disposed, and where no pointed part exists in a second direction which is orthogonal to the first direction. Applicants note that the manner in which plasmons are excited or not excited, as described above, is described in the paragraph bridging pages 11 and 12 of the specification. In accordance with the present invention, the apparatus as recited in claim 15 includes a light source, a polarization modulator which switches a direction of polarization of light from the light source between orthogonal directions in which one of the directions is parallel to the first direction and another direction which is parallel to the second direction, an optical member for irradiating the gap and the pointed part with light from the light source through the polarization modulator, a detector for detecting at least one of light passed through an object and light which is at least one of reflected and scattered by the object, and a separator for removing a signal caused by background light and for extracting only a signal of the near-field light from the signal outputted from the detector by using synchronous signal detection with switching of polarization direction by the polarization modulator. Dependent claims 16 and 17 correspond to previous dependent claims 4 and 8.

With respect to new independent claim 18, as shown in Figs. 3 and 4, a needle type probe 301 in a shape of a multi-angular pyramid has a part which is covered with at least one metal member and with a sharpened tip part at the end of the probe where the plasmon is excited by the light from the light source device and another part represented by the non-hatched area in Fig. 3B at which a non-metal is disposed at a surface of the probe or substantially no plasmon is excited, as recited

in claim 18, as described at pages 16 and 17 of the specification. In accordance with the present invention as recited in claim 18, a polarization modulator is provided for modulating a direction of polarization of light from the light source device between orthogonal directions in which one of the directions is parallel to a direction in which a width of the tip part of the probe having the metal member monotonically decreases and another direction which is orthogonal thereto. As described at page 17 and as set forth in dependent claim 20, there is shown in Fig. 4 other faces of the pyramid being coated with a metal 401 and having non-coated parts 402 provided on the top end of the metal for shading which non-coated portion delimits a gap which is smaller than half-wavelength of the light of the light source device, as now recited in new dependent claim 20 which corresponds to the features previously set forth in claim 9.

Applicants submit that the independent and dependent claims should be considered to be in compliance with 35 U.S.C. §112, and applicants submit that such claims recite features not disclosed or taught in the cited art, as will become clear from the following discussion.

As to the objection to claim 6 and the rejection of claims 9-10, 12 and 14 under 35 U.S.C. §112, second paragraph, such objection and rejection are considered to be obviated by the cancellation of the aforementioned claims.

As to the rejection of claims 1-2, 4-5, 12-14 under 35 U.S.C. §102(b) as being anticipated by Sato et al (U.S. 6,046,448) [hereinafter Sato]; the rejection of claim 3 under 35 U.S.C. §103(a) as being unpatentable over Sato in view of Heffels et al (6,535,283) [hereinafter Heffels]; the rejection of claim 8 under 35 U.S.C. §103(a) as being unpatentable over Sato in view of Maeda et al (6,738,338); the rejection of claims 7, 9-11 under 35 U.S.C. §103(a) as being unpatentable over Sato in view of Fischer (5,770,855); and the rejection of claim 6 under 35 U.S.C. §103(a) as being unpatentable over Sato; such rejections are considered to be obviated by the

cancellation of the aforementioned claims, and are traversed insofar as they are applicable to the present claims.

As to the requirements to support a rejection under 35 U.S.C. 102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

With regard to the requirements to support a rejection under 35 U.S.C. 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge". The court pointed out:

> The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

Turning to Sato et al, applicants note that this patent discloses an optical fiber probe of a light transmitting body which has a minute opening on the top of a sharpened tip and has a configuration as illustrated in Figs. 1-4 of the drawings of this patent, for example. It is noted that as described in col. 13, lines 6-30 of Sato et al, instead of a light transmitting body as utilized in Figs. 1-4, Fig. 5 shows a probe 22 consisting of a metal probe with a sharpened tip. In any of the embodiments disclosed by Sato et al, applicants submit that Sato et al in the sense of 35 U.S.C. 102 or 35 U.S.C. 103 fails to disclose or teach a metal member disposed on a planar substrate so as to have at least one pointed part with a width which monotonically decreases in a first direction and delimiting a gap in an area where no metal member is disposed, and where no pointed part exists in a second direction which is orthogonal to the first direction, as recited in claim 15, which features are

represented by Fig. 1B of the drawings of this application, for example. Further, applicants submit that Sato et al does not disclose or teach the other structural features of claim 15 and the dependent claims in the sense of 35 U.S.C. 102 or 35 U.S.C. 103, such that all claims patentably distinguish thereover and should be considered allowable at this time.

With respect to independent claim 18, while Sato et al may be considered to disclose a metal member with a sharpened tip as represented by the probe 22 in Fig. 5 of Sato et al, and thereby representing a needle type of probe, it is apparent that Sato et al does not disclose or teach in the sense of 35 U.S.C. 102 or 35 U.S.C. 103 a needle type of probe having a part which is covered with at least one metal member and with a sharpened tip part at an end of the probe where a plasmon is excited by the light from the light source device, and an other part at which a non-metal is disposed at a surface of the probe where substantially no plasmon is excited. Thus, irrespective of the contentions by the Examiner, Sato et al does not disclose or teach the claimed features of claim 18 and the dependent claims thereof, noting that, for example, dependent claim 20 recites the feature that one portion of the faces of the probe other than faces on which the metal member is provided are coated with a predetermined metal so as to provide a non-coated portion of the faces at an end of the tip part which non-coated portion delimits a gap which is smaller than a half-wavelength of the light of the light source device. Thus, it is apparent that claim 18 and its dependent claims also patentably distinguish over Sato et al in the sense of 35 U.S.C. 102 and 35 U.S.C. 103, and should be considered allowable thereover.

Applicants submit that Sato et al also fails to disclose a polarization modulator operating in the manner recited in claims 15 and 18 and the dependent claims as well as the combination of features as recited. Thus, all claims patentably distinguish over Sato et al.

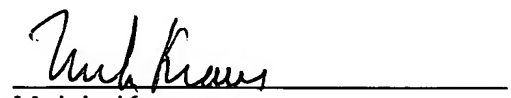
With regard to the other art cited in combination with Sato et al, applicants submit that none of this other cited art disclose the aforementioned features of the probe or metal member as recited in independent claims 15 and 18, and thereby fail to overcome the deficiencies of Sato et al as pointed out above. Additionally, applicants submit that the Examiner's suggested modifications to provide features, as claimed, represents a hindsight reconstruction attempt utilizing the principle of "obvious to try" which is not the standard of 35 U.S.C. 103. See In re Fine, supra. Thus, applicants submit that all claims patentably distinguish over any combination of the cited art, as proposed by the Examiner, in the sense of 35 U.S.C. 103 and all claims should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims present in this application patentably distinguish over the cited art and should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courteously solicited.

Applicants note that the Examiner is invited to contact the undersigned attorney to schedule an interview, if deemed necessary, in order to overcome any outstanding issues prior to issuance of an Office Action other than a Notice of Allowance.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (501.41069X00) and please credit any excess fees to such deposit account.

Respectfully submitted,



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